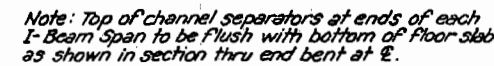
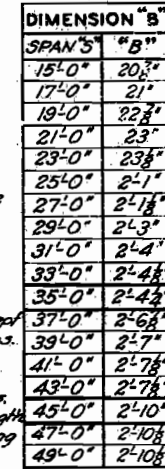


| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|------------------------|-------|-----------------------|----------------|--------------|-----------------|
| 5 | NO. | REF 1 (S.H.) | 19 | | |



Note: Depth of outside stringers will in some cases be a fraction of an inch less than that of inside stringers and in order to keep bottom of slab horizontal it will be necessary to haunch slab down to top of outside stringers.



| SPAN "S" | PER PLANS | | PERMISSIBLE SUBSTITUTIONS | | | |
|-------------|----------------|-----------|---------------------------|--------------|-----------------|-----------|
| | CARNEGIE BEAMS | | STANDARD I-BEAMS | | BETHLEHEM BEAMS | |
| | Inside | Outside | Inside | Outside | Inside | Outside |
| 15'-0" | 14" @ 30" | 14" @ 30" | 12" @ 40.8" | 12" @ 35" | 14" @ 30" | 14" @ 30" |
| 17'-0" | 14" @ 33" | 14" @ 33" | 15" @ 42.9" | 15" @ 42.3" | 14" @ 33" | 14" @ 33" |
| 19'-0" | 16" @ 37" | 16" @ 37" | 15" @ 42.3" | 15" @ 42.3" | 16" @ 37" | 16" @ 37" |
| 21'-0" | 16" @ 40" | 16" @ 37" | 15" @ 50" | 15" @ 45" | 16" @ 40" | 16" @ 37" |
| 23'-0" | 16" @ 45" | 16" @ 40" | 18" @ 54.7" | 18" @ 54.7" | 16" @ 45" | 16" @ 40" |
| 25'-0" | 18" @ 47" | 18" @ 47" | 18" @ 54.7" | 18" @ 54.7" | 18" @ 47" | 18" @ 47" |
| 27'-0" | 18" @ 52" | 18" @ 47" | 18" @ 60" | 18" @ 54.7" | 18" @ 52" | 18" @ 47" |
| 29'-0" | 20" @ 55" | 20" @ 55" | 20" @ 65.4" | 20" @ 65.4" | 20" @ 55" | 20" @ 55" |
| 31'-0" | 21" @ 58" | 21" @ 58" | 20" @ 70" | 20" @ 65.4" | 22" @ 58" | 22" @ 58" |
| 33'-0" | 21" @ 62" | 21" @ 58" | 20" @ 75" | 20" @ 70" | 22" @ 62" | 22" @ 58" |
| 35'-0" | 21" @ 67" | 21" @ 62" | 20" @ 81.4" | 20" @ 75" | 22" @ 67" | 22" @ 62" |
| 37'-0" | 24" @ 70" | 24" @ 70" | 24" @ 79.9" | 24" @ 79.9" | 24" @ 70" | 24" @ 70" |
| 39'-0" | 24" @ 74" | 24" @ 70" | 24" @ 79.9" | 24" @ 79.9" | 24" @ 74" | 24" @ 70" |
| 41'-0" | 24" @ 81" | 24" @ 74" | 24" @ 85.9" | 24" @ 79.9" | 24" @ 81" | 24" @ 74" |
| 43'-0" | 24" @ 85" | 24" @ 81" | 24" @ 100" | 24" @ 90" | 26" @ 85" | 26" @ 81" |
| 45'-0" | 27" @ 85" | 27" @ 85" | 24" @ 105.9" | 24" @ 100" | 26" @ 85" | 26" @ 85" |
| 47'-0" | 27" @ 91" | 27" @ 85" | 24" @ 105.9" | 24" @ 105.9" | 28" @ 91" | 28" @ 85" |
| 49'-0" | 27" @ 91" | 27" @ 91" | 24" @ 115" | 24" @ 105.9" | 28" @ 91" | 28" @ 91" |

GENERAL NOTES:

Loading: One 10 Ton Truck, 80% of weight on rear axle, 30% impact,
14'-0" wheel base, 5'-0" gage, 10" tire.
All concrete to be 1:2:3 1/2 mix, "x".
Exposed edges to be beveled 3/8" where no other bevel is noted.

All timber to be crosscut Douglas Fir of the West Coast Region, Close-grained Structural Grade; Crosscut Southern Yellow Pine, Dense Structural Square Edge and Sound Grade; or untreated California Redwood, Prime Structural Grade. All timber rough sawn except as noted in timber bill for pile caps. Slight variations in sawing to be in accordance with grading rules. All treated timber to be cut to lengths, shaped and bored as shown before treating. Backing plank are all killed & long and are to be fitted and cut in the field.

Field holes for drift pins shall be field bored $\frac{3}{4}$ " Unless otherwise noted all other field holes in timber shall be field bored $\frac{3}{4}$ ". When bolts with conical or conical heads are indicated on plans cut washers shall be used under heads of all washers shall be used under heads of all bolts and under nuts of all bolts.

Number of bolts, drift pins, nails and washers given exact; no allowance made for excess. Cost of substructure hardware to be included in price bid for timber in place.

I-Beams with fastenings, spacers, handrail, handrail posts with fastenings, slip angles and cap plate on end bent with fastenings, will be paid for as structural steel. Cost of metallic edge moulding will be included in unit bid price for concrete.

Rivets - 3", holes 1 1/2", except in handrail where rivets shall be 5", holes 1 1/2". Turned bolts 3", holes subpunched and reamed to driving fit. Field connections, except handrail, shall be turned bolts. Field connections for handrail shall be 3" button head bolts, 1 1/2" holes.

Detail shop drawings shall be submitted to the State Highway Department in duplicate and shall be approved before steel is fabricated.

Paint: Shop - none; Field - Three coats of paint as furnished by the Missouri State Highway Department.

concrete stitch felt in vertical joint securely to one face of concrete with copper wire.
See Special Provisions in regard to permissible substitution of beams.

B.M. Elev. 299.89. N.I.R. 18" W Oak 40' L.I. Sta. 106+65.

B.M. Elev. 299.89. N. 1. R. 18" W. Oak 40' Lt. Sta. 106+65.

STATE ROAD FROM NEELYVILLE TO COON ISLAND

ABOUT 2 MILES EAST OF NEELYVILLE

PROJECT NO. REF. NO. 1 (S.H.) STA. 112+69

BUTLER COUNTY

SUBMITTED BY: W.R. Sacks DATE: 4/28/

APPROVED BY, *T.H. Cutler* DATE, *4/28/*

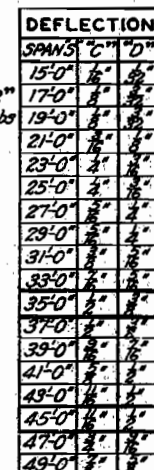
CHIEF ENGINEER /

SHED.

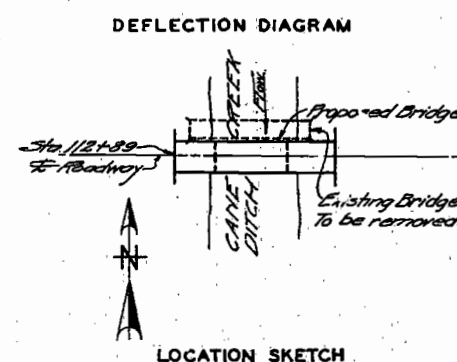
FINISHED

Sheet No. 1 of 3.

S-524



Note: Floor slab to be brought to grade and dead load deflection taken care of by increasing slab thickness. Depth of slab at outside face of curb to be kept uniform and bottom surface of slab warped between curb and outside beam to obtain required thickness at beam. Payment will be allowed for additional concrete required for thickening slab. This additional concrete is included in "Estimated Quantities."



Note: Bridge excavation will be allowed for end bents within horizontal limits shown and noted on "Half Plan of End Bent" sheet # 2. This excavation will be computed from existing ground line to bottom end of 6"x6" backing supports.

Note:- This drawing is not to scale.
Follow dimensions.

Designed Nov. 1929 By F.V.H.
 Drawn Mar. 1930 By R.J.G.
 Traced Dec. 1931 By R.J.G.
 Checked Dec. 1931 By R.J.G.
 Assembled Apr. 1932 By L.H.-C.A.F.
 Checked April 1932 By L.H.M.

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEET |
|------------------------|-------|-----------------------|----------------|--------------|----------------|
| 5 | MO. | Ref. #1514 | 19 | | |



BILL OF REINFORCING STEEL

| NO. | SIZE | LENGTH | MARK | LOCATION |
|-----|------|--------|------|----------|
| "A" | 1" # | "B" | C1 | Curb |
| "C" | 1" # | 2'-0" | C2 | " |
| "D" | 1" # | 20'-9" | S1 | Slab |
| "E" | 1" # | "F" | S2 | " |

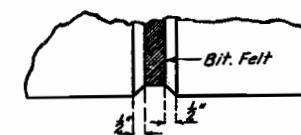
BENDING SKETCH

| SPAN | SINGLE SPAN | | | | | | ONE END SPAN | | | | | | ONE INT. SPAN | | | | | |
|--------|-------------|--------|-----|-----|-----|--------|--------------|--------|-----|-----|-----|--------|---------------|--------|-----|-----|-----|--------|
| "S" | "A" | "B" | "C" | "D" | "E" | "F" | "A" | "B" | "C" | "D" | "E" | "F" | "A" | "B" | "C" | "D" | "E" | "F" |
| 15'-0" | 8 | 16'-9" | 24 | 76 | 26 | 16'-9" | 8 | 15'-9" | 22 | 70 | 26 | 15'-9" | 8 | 16'-9" | 20 | 64 | 26 | 14'-9" |
| 17'-0" | 8 | 18'-9" | 28 | 86 | 26 | 18'-9" | 8 | 17'-9" | 24 | 80 | 26 | 17'-9" | 8 | 18'-9" | 20 | 74 | 26 | 16'-9" |
| 19'-0" | 8 | 20'-9" | 28 | 92 | 26 | 20'-9" | 8 | 19'-9" | 28 | 88 | 26 | 19'-9" | 8 | 18'-9" | 28 | 84 | 26 | 18'-9" |
| 21'-0" | 8 | 22'-9" | 30 | 100 | 26 | 22'-9" | 8 | 21'-9" | 28 | 96 | 26 | 21'-9" | 8 | 20'-9" | 26 | 92 | 26 | 20'-9" |
| 23'-0" | 8 | 24'-9" | 36 | 112 | 26 | 24'-9" | 8 | 23'-9" | 34 | 106 | 26 | 23'-9" | 8 | 22'-9" | 32 | 100 | 26 | 22'-9" |
| 25'-0" | 8 | 26'-9" | 36 | 118 | 26 | 26'-9" | 8 | 25'-9" | 36 | 114 | 26 | 25'-9" | 8 | 24'-9" | 36 | 110 | 26 | 24'-9" |
| 27'-0" | 8 | 28'-9" | 36 | 130 | 26 | 28'-9" | 8 | 27'-9" | 34 | 124 | 26 | 27'-9" | 8 | 26'-9" | 32 | 118 | 26 | 26'-9" |
| 29'-0" | 8 | 30'-9" | 44 | 138 | 26 | 30'-9" | 8 | 29'-9" | 42 | 132 | 26 | 29'-9" | 8 | 28'-9" | 40 | 126 | 26 | 28'-9" |
| 31'-0" | 8 | 32'-9" | 44 | 146 | 26 | 32'-9" | 8 | 31'-9" | 44 | 140 | 26 | 31'-9" | 8 | 30'-9" | 44 | 134 | 26 | 30'-9" |
| 33'-0" | 16 | 18'-6" | 52 | 154 | 52 | 18'-6" | 16 | 18'-0" | 50 | 180 | 52 | 18'-0" | 16 | 17'-6" | 48 | 146 | 52 | 17'-6" |
| 35'-0" | 16 | 20'-6" | 52 | 162 | 52 | 20'-6" | 16 | 19'-0" | 50 | 158 | 52 | 19'-0" | 16 | 18'-6" | 48 | 154 | 52 | 18'-6" |
| 37'-0" | 16 | 20'-6" | 52 | 172 | 52 | 20'-6" | 16 | 20'-0" | 50 | 168 | 52 | 20'-0" | 16 | 19'-6" | 48 | 164 | 52 | 19'-6" |
| 39'-0" | 16 | 21'-6" | 60 | 180 | 52 | 21'-6" | 16 | 21'-0" | 58 | 176 | 52 | 21'-0" | 16 | 20'-6" | 56 | 172 | 52 | 20'-6" |
| 41'-0" | 16 | 22'-6" | 60 | 188 | 52 | 22'-6" | 16 | 22'-0" | 58 | 184 | 52 | 22'-0" | 16 | 21'-6" | 56 | 180 | 52 | 21'-6" |
| 43'-0" | 16 | 23'-6" | 60 | 198 | 52 | 23'-6" | 16 | 23'-0" | 58 | 194 | 52 | 23'-0" | 16 | 22'-6" | 56 | 190 | 52 | 22'-6" |
| 45'-0" | 16 | 24'-6" | 60 | 208 | 52 | 24'-6" | 16 | 24'-0" | 58 | 204 | 52 | 24'-0" | 16 | 23'-6" | 64 | 198 | 52 | 23'-6" |
| 47'-0" | 16 | 25'-6" | 68 | 216 | 52 | 25'-6" | 16 | 25'-0" | 66 | 210 | 52 | 25'-0" | 16 | 24'-6" | 64 | 204 | 52 | 24'-6" |
| 49'-0" | 16 | 26'-6" | 68 | 224 | 52 | 26'-6" | 16 | 26'-0" | 66 | 220 | 52 | 26'-0" | 16 | 25'-6" | 64 | 216 | 52 | 25'-6" |

Note: Reinforcing bars in each span to be billed and tagged separately.

| SUPERSTRUCTURE HARDWARE BILL | | | | | | |
|------------------------------|-----------------|------------------------|------|-------|--------|-------------------------------|
| | PIECE | LOCATION | NOS. | SIZE | LENGTH | REMARKS |
| | Cap Plate | Under Slab | 2 | 8"x4" | 21'-0" | See detail. |
| | 3/4" Lag Screws | Cap Pl. | 30 | 3/4" | 4" | Flat csk heads. |
| | Spacer Bolts | Spans 15' to 31' Incl. | 48 | 3/4" | Varies | Turn bolts, washer for nut. |
| | Spacer Bolts | Spans 33' to 49' Incl. | 64 | 3/4" | Varies | Turn bolts, washer for nut. |
| | Handrail Bolts | Spans 15' | 16 | 3/4" | 6" | Sq. hds., washers, hex. nuts. |
| | " " | to 19' Incl. | 32 | 3/4" | 1 1/2" | Button heads. |
| | " " | Spans 21' | 20 | 3/4" | 6" | Sq. hds., washers, hex. nuts. |
| | " " | to 25' Incl. | 40 | 3/4" | 1 1/2" | Button heads. |
| | " " | Spans 27' | 24 | 3/4" | 6" | Sq. hds., washers, hex. nuts. |
| | " " | to 31' Incl. | 48 | 3/4" | 1 1/2" | Button heads. |
| | " " | Spans 33' | 28 | 3/4" | 6" | Sq. hds., washers, hex. nuts. |
| | " " | to 37' Incl. | 56 | 3/4" | 1 1/2" | Button heads. |
| | " " | Spans 39' | 32 | 3/4" | 6" | Sq. hds., washers, hex. nuts. |
| | " " | to 43' Incl. | 64 | 3/4" | 1 1/2" | Button heads. |
| | " " | Spans 45' | 36 | 3/4" | 6" | Sq. hds., washers, hex. nuts. |
| | " " | to 49' Incl. | 72 | 3/4" | 1 1/2" | Button heads. |
| | Bolts | Bearing Pls. | 16 | 3/4" | 12" | Sq. heads, no threads. |
| | Flange Clamp | Bearings | 16 | See | Detail | Detailed on this sheet. |
| | Spacer Bolts | Spans 15' to 31' Incl. | 48 | 3/4" | Varies | Turn bolts, washer for nut. |
| | Spacer Bolts | Spans 33' to 49' Incl. | 64 | 3/4" | Varies | Turn bolts, washer for nut. |
| | Handrail Bolts | Spans 15' | 12 | 3/4" | 6" | Sq. hds., washers, hex. nuts. |
| | " " | to 19' Incl. | 32 | 3/4" | 1 1/2" | Button heads. |
| | " " | Spans 21' | 16 | 3/4" | 6" | Sq. hds., washers, hex. nuts. |
| | " " | to 25' Incl. | 40 | 3/4" | 1 1/2" | Button heads. |
| | " " | Spans 27' | 20 | 3/4" | 6" | Sq. hds., washers, hex. nuts. |
| | " " | to 31' Incl. | 48 | 3/4" | 1 1/2" | Button heads. |
| | " " | Spans 33' | 24 | 3/4" | 6" | Sq. hds., washers, hex. nuts. |
| | " " | to 37' Incl. | 56 | 3/4" | 1 1/2" | Button heads. |
| | " " | Spans 39' | 28 | 3/4" | 6" | Sq. hds., washers, hex. nuts. |
| | " " | to 43' Incl. | 64 | 3/4" | 1 1/2" | Button heads. |
| | " " | Spans 45' | 32 | 3/4" | 6" | Sq. hds., washers, hex. nuts. |
| | " " | to 49' Incl. | 72 | 3/4" | 1 1/2" | Button heads. |
| | Bolts | Bearing Pls. | 16 | 3/4" | 12" | Sq. heads, no threads. |
| | Splice Pl. | Beam Splice | 4 | 3/4" | 2' | Turn bolts, washer for nut. |
| | " " | Spans 15' to 31' Incl. | 48 | 3/4" | 2' | " " " " " " |
| | Flange Clamp | Beam Splice | 16 | See | Detail | Detailed on this sheet. |
| | Clip Ls. | Beam Splice | 8 | 3/4" | 2' | Sheet #3 of 3. |
| | Bolts | Beam Splice | 16 | 3/4" | 2' | Turn bolts. |

* 2 Washers plus washers for fill required for alignment of railposts.
** Total for entire bridge.



*Note: Use bevel as shown for exposed faces of all joints consisting of bituminous felt except at top surface of roadway slab.
Use metallic edge moulding at top surface of roadway each side of felt joint.*

DETAILS OF BEVEL FOR BIT. FELT JOINTS

| SUBSTRUCTURE HARDWARE BILL | | | | | | | |
|----------------------------|-----------|-----------------|----------|------|--------|--------------|-------------|
| | PIECE | LOCATION | NO. PCS. | SIZE | LENGTH | O.G. WASHERS | CUT WASHERS |
| ONE END BENT | Drift Pin | Backing Cap | 4 | 3/4" | 12" | | |
| | " " | Pile Cap | 4 | 3/4" | 2'-0" | | |
| | Bolts | Backing Support | 4 | 3/4" | 22" | 4 | 4 |
| | Nails | Backing | 141 | 30d | 4 1/2" | | |
| | Bolts | Backing Support | 24 | 3/4" | 2'-0" | 30 | 18 |
| TWO END BENTS | Drift Pin | Pile Cap | 8 | 3/4" | 2'-0" | | |
| | Bolts | Bracing | 4 | 3/4" | 18" | 8 | |
| | Bolts | Bracing | 12 | 3/4" | 22" | 24 | |
| | | | | | | | |

§ Omit when "E" is less than 5'-0".

Note: Bolts to be threaded 8" and sawed off $\frac{1}{2}$ " outside of nut after nut has been tightened.

Note:- This drawing is not to scale.
Follow dimensions.

Sheet No. 2 of 3.

S-524

Designed Nov. 1929 By F.W.H.
 Drawn Dec. 1930 By R.J.G. Assembled Apr. 1932 By L.H.-C.A.F.
 Traced Dec. 1931 By R.J.G. Checked Apr. 1932 By J.H.M.
 Checked Dec. 1931 By J.H.M.

DETAILS OF BEARING ON PILE CAP

Note: Cast iron clamps used on bearing plates to have $\frac{1}{8}$ " clearance at flange of beam to allow for expansion. All clamps to have $\frac{3}{8}$ " ϕ cored holes. Use two clamps only on each I Beam at pile caps on end bents.

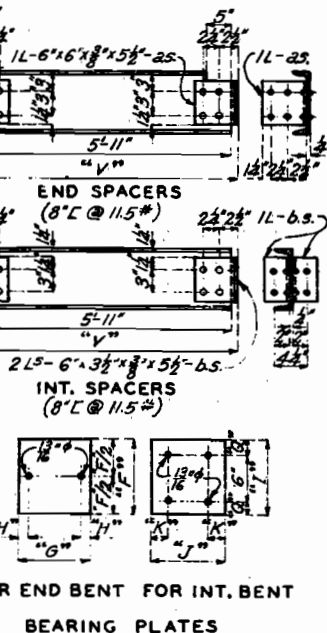
MISSOURI STATE HIGHWAY DEPARTMENT

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| 5 | MO. | 16-1-15-1 | 19 | | |

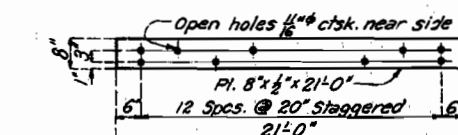
| TABLE OF SPACERS | | | | | |
|------------------|-----|-------------|--------------|--------|-----|
| SPAN "S" | NO. | END SPACERS | INT. SPACERS | NO. | "V" |
| 15'-0" | 6 | 5'-11" | 3 | 5'-11" | |
| 17'-0" | 6 | 5'-11" | 3 | 5'-11" | |
| 19'-0" | 6 | 5'-11" | 3 | 5'-11" | |
| 21'-0" | 6 | 5'-11" | 3 | 5'-11" | |
| 23'-0" | 6 | 5'-11" | 3 | 5'-11" | |
| 25'-0" | 6 | 5'-11" | 3 | 5'-11" | |
| 27'-0" | 6 | 5'-11" | 3 | 5'-11" | |
| 29'-0" | 6 | 5'-11" | 3 | 5'-11" | |
| 31'-0" | 6 | 5'-11" | 3 | 5'-11" | |
| 33'-0" | 6 | 5'-11" | 3 | 5'-11" | |
| 35'-0" | 6 | 5'-11" | 3 | 5'-11" | |
| 37'-0" | 6 | 5'-11" | 3 | 5'-11" | |
| 39'-0" | 6 | 5'-11" | 3 | 5'-11" | |
| 41'-0" | 6 | 5'-11" | 3 | 5'-11" | |
| 43'-0" | 6 | 5'-11" | 3 | 5'-11" | |
| 45'-0" | 6 | 5'-11" | 3 | 5'-11" | |
| 47'-0" | 6 | 5'-11" | 3 | 5'-11" | |
| 49'-0" | 6 | 5'-11" | 3 | 5'-11" | |

| TABLE OF STRINGERS | | | | | | | | | | | |
|--------------------|-----|----------------|-------------|----------|-----------|--------|--------|--------|-----|-----|-----|
| SPAN "S" | NO. | SIZE | SINGLE SPAN | END SPAN | INT. SPAN | "C" | "D" | "E" | "F" | "G" | "H" |
| 15'-0" | 4 | 14" C.B. @ 30" | 15'-9" | 15'-4" | 15'-4" | 6'-4" | 5'-2" | 2'-2" | | | |
| 17'-0" | 4 | 14" C.B. @ 33" | 17'-9" | 17'-4" | 17'-4" | 7'-6" | 5'-2" | 2'-2" | | | |
| 19'-0" | 4 | 16" C.B. @ 37" | 19'-9" | 19'-4" | 19'-4" | 8'-8" | 6'-2" | 2'-2" | | | |
| 21'-0" | 2 | 16" C.B. @ 37" | 21'-9" | 21'-4" | 21'-4" | 9'-8" | 6'-2" | 2'-2" | | | |
| 23'-0" | 2 | 16" C.B. @ 40" | 23'-9" | 23'-4" | 23'-4" | 10'-8" | 6'-2" | 2'-2" | | | |
| 25'-0" | 4 | 18" C.B. @ 47" | 25'-9" | 25'-4" | 25'-4" | 11'-8" | 7'-2" | 3'-2" | | | |
| 27'-0" | 2 | 18" C.B. @ 47" | 27'-9" | 27'-4" | 27'-4" | 12'-8" | 7'-2" | 3'-2" | | | |
| 29'-0" | 4 | 20" C.B. @ 55" | 29'-9" | 29'-4" | 29'-4" | 13'-8" | 8'-2" | 4'-2" | | | |
| 31'-0" | 4 | 21" C.B. @ 58" | 31'-9" | 31'-4" | 31'-4" | 14'-8" | 9'-2" | 5'-2" | | | |
| 33'-0" | 2 | 21" C.B. @ 62" | 33'-9" | 33'-4" | 33'-4" | 15'-8" | 10'-2" | 6'-2" | | | |
| 35'-0" | 2 | 21" C.B. @ 62" | 35'-9" | 35'-4" | 35'-4" | 16'-8" | 10'-2" | 6'-2" | | | |
| 37'-0" | 4 | 24" C.B. @ 70" | 37'-9" | 37'-4" | 37'-4" | 18'-8" | 11'-2" | 7'-2" | | | |
| 39'-0" | 2 | 24" C.B. @ 70" | 39'-9" | 39'-4" | 39'-4" | 19'-8" | 12'-2" | 8'-2" | | | |
| 41'-0" | 2 | 24" C.B. @ 74" | 41'-9" | 41'-4" | 41'-4" | 20'-8" | 12'-2" | 8'-2" | | | |
| 43'-0" | 2 | 24" C.B. @ 81" | 43'-9" | 43'-4" | 43'-4" | 22'-8" | 13'-2" | 9'-2" | | | |
| 45'-0" | 4 | 27" C.B. @ 85" | 45'-9" | 45'-4" | 45'-4" | 24'-8" | 14'-2" | 10'-2" | | | |
| 47'-0" | 4 | 27" C.B. @ 91" | 47'-9" | 47'-4" | 47'-4" | 26'-8" | 15'-2" | 11'-2" | | | |
| 49'-0" | 4 | 27" C.B. @ 91" | 49'-9" | 49'-4" | 49'-4" | 28'-8" | 16'-2" | 12'-2" | | | |

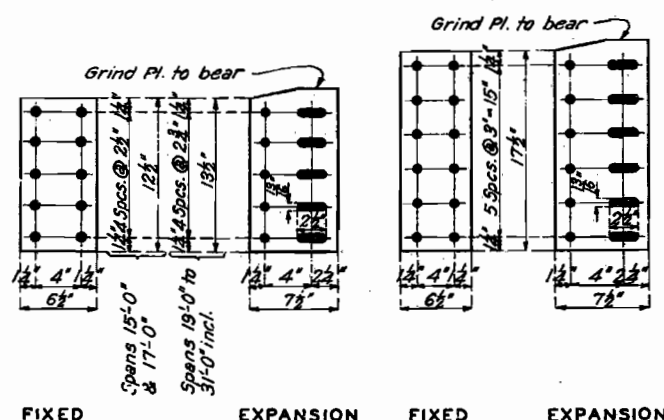
| TABLE OF RAIL ANGLE DIMENSIONS | | | | | | | | | | | | | | |
|--------------------------------|--------|---------|---------|--------|--------|-----|--------|--------|--------|--------|--------|--------|--------|--------|
| SINGLE SPAN | SPAN | MARK | "L" | "M" | "N" | "O" | "P" | "R" | "T" | "U" | "W" | "X" | "Y" | "Z" |
| | 15'-0" | RA1 | 16'-7" | 5'-0" | 0 | 0 | 0 | 0 | 0 | 5'-5" | 0 | 0 | 0 | 5'-0" |
| | 17'-0" | " | 18'-7" | 5'-0" | 0 | 0 | 0 | 0 | 0 | 6'-1" | 0 | 0 | 0 | 5'-8" |
| | 19'-0" | " | 20'-7" | 6'-4" | 0 | 0 | 0 | 0 | 0 | 6'-9" | 0 | 0 | 0 | 6'-4" |
| | 21'-0" | " | 22'-7" | 5'-2" | 0 | 0 | 0 | 5'-4" | 2" | 5'-7" | 0 | 0 | 0 | 5'-2" |
| | 23'-0" | " | 24'-7" | 5'-8" | 0 | 0 | 0 | 5'-10" | 2" | 6'-1" | 0 | 0 | 0 | 5'-8" |
| | 25'-0" | " | 26'-7" | 6'-2" | 0 | 0 | 0 | 6'-4" | 2" | 6'-7" | 0 | 0 | 0 | 6'-2" |
| | 27'-0" | " | 28'-7" | 5'-3" | 0 | 0 | 0 | 5'-5" | 2" | 5'-9" | 2" | 5'-5" | 0 | 5'-3" |
| | 29'-0" | " | 30'-7" | 5'-7" | 0 | 0 | 0 | 5'-10" | 2" | 6'-0" | 2" | 5'-10" | 0 | 5'-7" |
| | 31'-0" | " | 32'-7" | 6'-0" | 0 | 0 | 0 | 6'-2" | 2" | 6'-3" | 2" | 6'-2" | 0 | 6'-0" |
| | 33'-0" | " | 34'-7" | 5'-3" | 5'-5" | 2" | 0 | 0 | 0 | 0 | 2" | 5'-9" | 2" | 5'-5" |
| | 35'-0" | " | 36'-7" | 5'-7" | 5'-9" | 2" | 0 | 0 | 0 | 0 | 2" | 6'-0" | 2" | 5'-9" |
| | 37'-0" | " | 38'-7" | 5'-11" | 6'-1" | 2" | 0 | 0 | 0 | 0 | 2" | 6'-4" | 2" | 5'-11" |
| | 39'-0" | " | 40'-7" | 5'-6" | 5'-8" | 2" | 0 | 0 | 2" | 5'-9" | 2" | 5'-6" | 2" | 5'-8" |
| | 41'-0" | " | 42'-7" | 5'-7" | 5'-9" | 2" | 0 | 0 | 2" | 6'-0" | 2" | 5'-9" | 2" | 5'-7" |
| 43'-0" | " | 44'-7" | 5'-11" | 6'-1" | 2" | 0 | 0 | 2" | 6'-4" | 2" | 6'-4" | 2" | 5'-11" | |
| 45'-0" | " | 46'-7" | 5'-4" | 5'-6" | 2" | 2" | 5'-6" | 2" | 5'-9" | 2" | 5'-6" | 2" | 5'-4" | |
| 47'-0" | " | 48'-7" | 5'-7" | 5'-9" | 2" | 2" | 5'-9" | 2" | 6'-0" | 2" | 5'-9" | 2" | 5'-7" | |
| 49'-0" | " | 50'-7" | 5'-10" | 6'-0" | 2" | 2" | 6'-0" | 2" | 6'-3" | 2" | 6'-0" | 2" | 5'-10" | |
| FIRST END SPAN | 15'-0" | RA2 | 15'-4" | 4'-7" | 0 | 0 | 0 | 0 | 0 | 5'-0" | 0 | 0 | 0 | 4'-7" |
| | 17'-0" | " | 17'-4" | 5'-3" | 0 | 0 | 0 | 0 | 0 | 5'-8" | 0 | 0 | 0 | 5'-3" |
| | 19'-0" | " | 19'-4" | 5'-11" | 0 | 0 | 0 | 0 | 0 | 6'-4" | 0 | 0 | 0 | 5'-11" |
| | 21'-0" | " | 21'-4" | 4'-10" | 0 | 0 | 0 | 5'-0" | 2" | 5'-3" | 0 | 0 | 0 | 4'-10" |
| | 23'-0" | " | 23'-4" | 5'-4" | 0 | 0 | 0 | 5'-6" | 2" | 5'-9" | 0 | 0 | 0 | 5'-4" |
| | 25'-0" | " | 25'-4" | 5'-10" | 0 | 0 | 0 | 6'-0" | 2" | 6'-3" | 0 | 0 | 0 | 5'-10" |
| | 27'-0" | " | 27'-4" | 5'-0" | 0 | 0 | 0 | 5'-2" | 2" | 5'-5" | 2" | 5'-2" | 0 | 5'-0" |
| | 29'-0" | " | 29'-4" | 5'-5" | 0 | 0 | 0 | 5'-7" | 2" | 5'-10" | 2" | 5'-7" | 0 | 5'-5" |
| | 31'-0" | " | 31'-4" | 5'-9" | 0 | 0 | 0 | 6'-0" | 2" | 6'-3" | 2" | 6'-0" | 0 | 5'-9" |
| | 33'-0" | " | 33'-4" | 5'-11" | 5'-3" | 0 | 0 | 0 | 0 | 0 | 2" | 5'-9" | 2" | 5'-11" |
| | 35'-0" | " | 35'-4" | 5'-5" | 5'-7" | 2" | 0 | 0 | 0 | 0 | 2" | 5'-10" | 2" | 5'-5" |
| | 37'-0" | " | 37'-4" | 5'-9" | 5'-11" | 2" | 0 | 0 | 0 | 0 | 2" | 6'-2" | 2" | 5'-9" |
| | 39'-0" | " | 39'-4" | 5'-2" | 5'-4" | 2" | 0 | 0 | 2" | 5'-7" | 2" | 5'-4" | 2" | 5'-2" |
| | 41'-0" | " | 41'-4" | 5'-5" | 5'-7" | 2" | 0 | 0 | 2" | 5'-10" | 2" | 5'-7" | 2" | 5'-5" |
| | 43'-0" | " | 43'-4" | 5'-9" | 5'-11" | 2" | 0 | 0 | 2" | 6'-2" | 2" | 5'-11" | 2" | 5'-9" |
| 45'-0" | " | 45'-4" | 5'-2" | 5'-5" | 2" | 2" | 5'-5" | 2" | 5'-10" | 2" | 5'-5" | 2" | 5'-2" | |
| 47'-0" | " | 47'-4" | 5'-5" | 5'-6" | 2" | 2" | 5'-8" | 2" | 5'-10" | 2" | 5'-6" | 2" | 5'-5" | |
| 49'-0" | " | 49'-4" | 5'-8" | 5'-11" | 2" | 2" | 5'-11" | 2" | 6'-1" | 2" | 5'-11" | 2" | 5'-8" | |
| ALL INT. SPANS | 15'-0" | RA3 | 14'-11" | 4'-5" | 0 | 0 | 0 | 0 | 0 | 4'-9" | 0 | 0 | 0 | 4'-7" |
| | 17'-0" | " | 16'-11" | 5'-1" | 0 | 0 | 0 | 0 | 0 | 5'-5" | 0 | 0 | 0 | 5'-3" |
| | 19'-0" | " | 18'-11" | 5'-9" | 0 | 0 | 0 | 0 | 0 | 6'-1" | 0 | 0 | 0 | 5'-11" |
| | 21'-0" | " | 20'-11" | 4'-8" | 0 | 0 | 0 | 5'-0" | 2" | 5'-4" | 0 | 0 | 0 | 4'-10" |
| | 23'-0" | " | 22'-11" | 5'-2" | 0 | 0 | 0 | 5'-6" | 2" | 5'-9" | 0 | 0 | 0 | 5'-4" |
| | 25'-0" | " | 24'-11" | 5'-8" | 0 | 0 | 0 | 6'-0" | 2" | 6'-0" | 0 | 0 | 0 | 5'-10" |
| | 27'-0" | " | 26'-11" | 4'-10" | 0 | 0 | 0 | 5'-2" | 2" | 5'-2" | 2" | 5'-2" | 0 | 4'-11" |
| | 29'-0" | " | 28'-11" | 5'-3" | 0 | 0 | 0 | 5'-6" | 2" | 5'-6" | 2" | 5'-6" | 0 | 5'-4" |
| | 31'-0" | " | 30'-11" | 5'-7" | 0 | 0 | 0 | 5'-11" | 2" | 5'-11" | 2" | 5'-11" | 0 | 5'-9" |
| | 33'-0" | " | 32'-11" | 4'-11" | 5'-3" | 2" | 0 | 0 | 0 | 0 | 2" | 5'-3" | 2" | 5'-1" |
| | 35'-0" | " | 34'-11" | 5'-3" | 5'-7" | 2" | 0 | 0 | 0 | 0 | 2" | 5'-7" | 2" | 5'-5" |
| | 37'-0" | " | 36'-11" | 5'-7" | 5'-11" | 2" | 0 | 0 | 0 | 0 | 2" | 5'-11" | 2" | 5'-9" |
| | 39'-0" | " | 38'-11" | 5'-0" | 5'-4" | 2" | 0 | 0 | 2" | 5'-4" | 2" | 5'-4" | 2" | 5'-1" |
| | 41'-0" | " | 40'-11" | 5'-9" | 5'-7" | 2" | 0 | 0 | 2" | 5'-7" | 2" | 5'-7" | 2" | 5'-5" |
| | 43'-0" | " | 42'-11" | 5'-7" | 5'-11" | 2" | 0 | 0 | 2" | 5'-10" | 2" | 5'-10" | 2" | 5'-9" |
| 45'-0" | " | 44'-11" | 5'-1" | 5'-4" | 2" | 2" | 5'-4" | 2" | 5'-4" | 2" | 5'-4" | 2" | 5'-2" | |
| 47'-0" | " | 46'-11" | 5'-4" | 5'-7" | 2" | 2" | 5'-7" | 2" | 5'-7" | 2" | 5'-7" | 2" | 5'-5" | |
| 49'-0" | " | 48'-11" | 5'-7" | 5'-10" | 2" | 2" | 5'-10" | 2" | 5'-10" | 2" | 5'-10" | 2" | 5'-11" | |
| LAST END SPAN | 15'-0" | RA4 | 16'-11" | 4'-7" | 0 | 0 | 0 | 0 | 0 | 5'-0" | 0 | 0 | 0 | 4'-11" |
| | 17'-0" | " | 18'-11" | 5'-3" | 0 | 0 | 0 | 0 | 0 | 6'-0" | 0 | 0 | 0 | 5'-7" |
| | 19'-0" | " | 20'-11" | 5'-11" | 0 | 0 | 0 | 0 | 0 | 6'-8" | 0 | 0 | 0 | 6'-4" |
| | 21'-0" | " | 22'-11" | 4'-9" | 0 | 0 | 0 | 5'-3" | 2" | 5'-6" | 0 | 0 | 0 | 5'-1" |
| | 23'-0" | " | 24'-11" | 5'-3" | 0 | 0 | 0 | 5'-9" | 2" | 6'-0" | 0 | 0 | 0 | 5'-7" |
| | 25'-0" | " | 26'-11" | 5'-9" | 0 | 0 | 0 | 6'-3" | 2" | 6'-6" | 0 | 0 | 0 | 6'-1" |
| | 27'-0" | " | 28'-11" | 4'-10" | 0 | 0 | 0 | 5'-4" | 2" | 5'-7" | 2" | 5'-4" | 0 | 5'-2" |
| | 29'-0" | " | 30'-11" | 5'-3" | 0 | 0 | 0 | 5'-9" | 2" | 6'-0" | 2" | 5'-9" | 0 | 5'-7" |
| | 31'-0" | " | 32'-11" | 5'-7" | 0 | 0 | 0 | 6'-2" | 2" | 6'-5" | 2" | 6'-2" | 0 | 6'-0" |
| | 33'-0" | " | 34'-11" | 4'-11" | 5'-5" | 2" | 0 | 0 | 0 | 0 | 2" | 5'-5" | 2" | 5'-3" |
| | 35'-0" | " | 36'-11" | 5'-3" | 5'-9" | 2" | 0 | 0 | 0 | 0 | 2" | 5'-9" | 2" | 5'-7" |
| | 37'-0" | " | 38'-11" | 5'-7" | 5'-11" | 2" | 0 | 0 | 0 | 0 | 2" | 5'-11" | 2" | 5'-9" |
| | 39'-0" | " | 40'-11" | 4'-11" | 5'-6" | 2" | 0 | 0 | 2" | 5'-8" | 2" | 5'-6" | 2" | 5'-3" |
| | 41'-0" | " | 42'-11" | 5'-3" | 5'-9" | 2" | 0 | 0 | 2" | 6'-0" | 2" | 5'-9" | 2" | 5'-7" |
| | 43'-0" | " | 44'-11" | 5'-6" | 5'-1" | 2" | 0 | 0 | 2" | 6'-3" | 2" | 6'-0" | 2" | 5'-10" |
| 45'-0" | " | 46'-11" | 5'-0" | 5'-6" | 2" | 2" | 5'-6" | 2" | 5'-9" | 2" | 5'-6" | 2" | 5'-4" | |
| 47'-0" | " | 48'-11" | 5'-3" | 5'-9" | 2" | 2" | 5'-9" | 2" | 6'-0" | 2" | 5'-9" | 2" | 5'-7" | |
| 49'-0" | " | 50'-11" | 5'-6" | 6'-0" | 2" | 2" | 6'-0" | 2" | 6'-3" | 2" | 6'-0" | 2" | 5'-10" | |



DETAIL OF RAIL ANGLES RAI TO RA4 INCL.

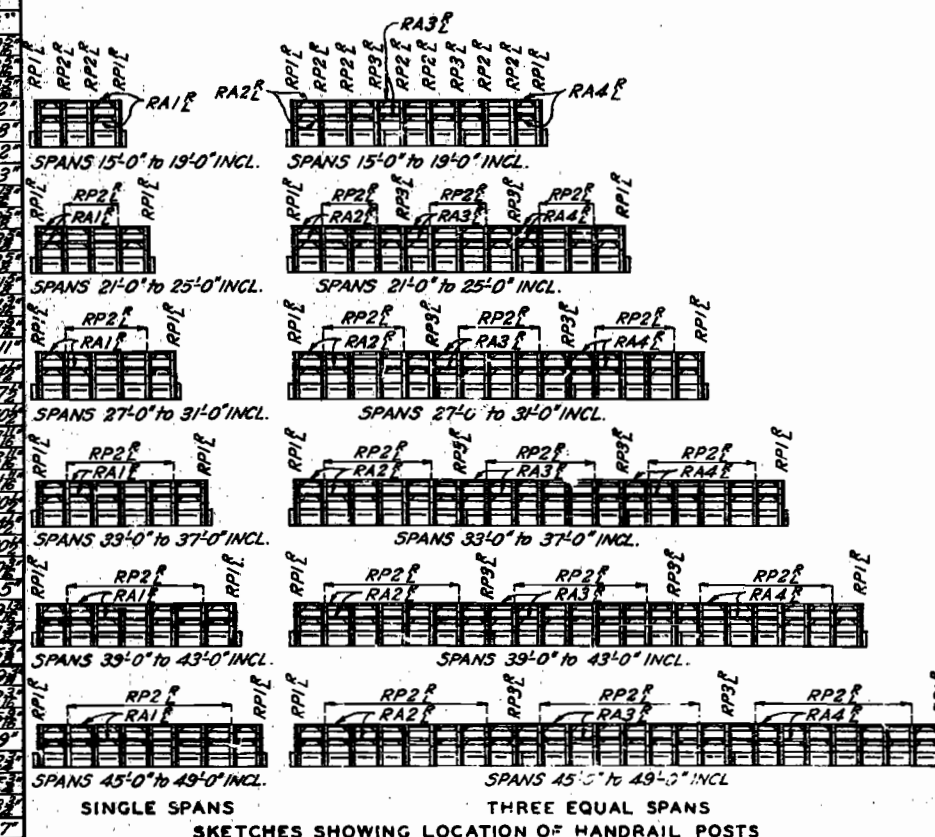


END BENT CAP PLATE



FIXED EXPANSION FIXED EXPANSION
SPANS 15'-0" TO 31'-0" INCL. SPANS 33'-0" TO 49'-0" INCL.

DETAILS OF SPLICE PLATES



SINGLE SPANS THREE EQUAL SPANS
SKETCHES SHOWING LOCATION OF HANDRAIL POSTS

